

Atomizer Aerosol Generator

ATM 241



Aerosol Generators series ATM 241

The aerosol generator ATM 241 is a droplet generators and especially developed for generating high aerosol concentrations with exceptional constancy (VDI-guideline 3491).

The main applications are generation of tracer particles or verifying measurements in very large clean rooms according to the guidelines VDI 2083 and DIN EN ISO 14644. The innovative design of these aerosol generators enables a flexible use.

A block with 4 slot nozzles is mounted in a nearly closed vessel of stainless steel. The nozzles are connected to an external compressed air supply. During the operation all nozzles must be immersed in the aerosol liquid

Advantages

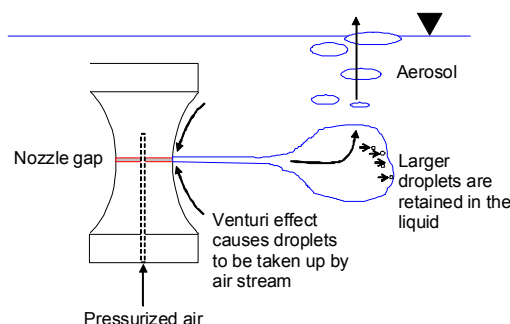
- Defined and highly constant particle number concentrations
- High consistency of the generated particle size distributions
- Generation of polydisperse aerosols, mainly $<1 \mu\text{m}$
- By variation of the nozzle pressure an number of the connected nozzles the particle production rate can be varied over wide ranges

Applications

- Verifying measurements in very large clean rooms
- Test of HEPA and ULPA filter media
- Generation of tracer particles

Principle

Main component of the series ATM 241 is a novel nozzle (patented), which allows by its design to generate a very fine aerosol. The figure below shows a schematic of this nozzle. The discharged air stream from the nozzle creates a negative pressure where it enters the liquid thereby carrying along small droplets. While the air travels through the liquid, the liquid works like a baffle plate in order to separate larger particles. They are retained in the liquid and remain in the reservoir.



Functionional principle of nozzles of ATM 241



Specifications

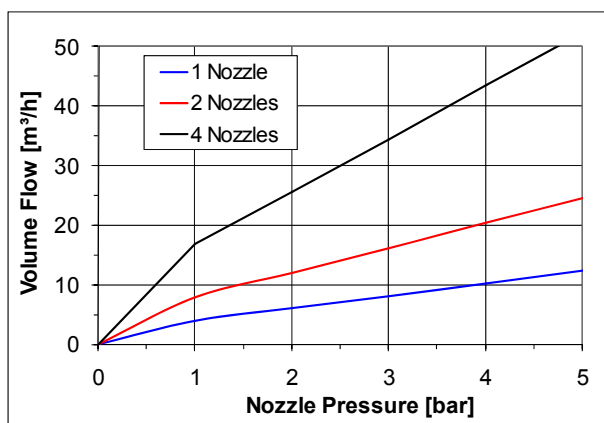
Details

The vessel of the aerosol generator contains 4 vertically cascaded slot nozzles featuring the same gap. The nozzles are connected to an external compressed air supply. The nozzles are connected to an external compressed air supply with a standard quick-fit coupling.

The ATM 241 is designed so that nozzle 1 is continuously in operation and nozzles 2 and/or 3 and 4 can be added independently.

Due to this feature and a varying air pressure a wide range of aerosol mass flow can be realised.

The ATM 241 includes a safety valve releasing at a pressure of approx. 0.012 bar.



Dependency of aerosol volume flow from nozzle pressure and nozzle number

Technical Data

Particle size DEHS	0.1 ... 1 µm (Median value: 0.1..0.5 µm)
Particle number concentration	>10 ⁸ Particles/cm ³
Mass flow	20...240 g/h (DEHS)
Aerosol substances	DEHS, PAO (Emery 3004), PSL-Suspensions, Salt Solutions
Number of nozzles	4, separately switchable
Filling amount	4.7 l (min.) ... 8 l (max.)
Atomizer pressure	1...5 x 10 ⁵ Pa (1...5 bar)
Dimensions	480 x 250 x 220 mm
Weight	6.2 kg

QMS certified to
DIN EN ISO 9001.



12 100 11908 TMS

For more information please visit
our website at
www.topas-gmbh.de

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Topas GmbH
Technologie-orientierte
Partikel-, Analysen- und Sensortechnik
Oskar Röder Str. 12 · D-01237 Dresden

Phone +49 (351) 21 66 43 - 0
Fax +49 (351) 21 66 43 55
E-mail office@topas-gmbh.de
Internet www.topas-gmbh.de

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